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Price YEN

8x refill YEN

Density

Heat resistance

Saturated water

[Young's Modul XY](#)

Young's Modul Z

Tensile Stren XY

Tensile Stren Z

Bending Modul XY

Bending Modul Z

Bending Stren XY

Bending Stren Z

Impact Strength XY

Impact Strength Z

UV resistance

Drying required

Drying oven

Drying heatbed

AMS compatible

Liquid Glue

Abrasive

Warps

Layer adhesion

Nozzle / hardened

Build plate

Print speed

Max Volum flow

Tips

Annealing

	PETG Basic*	PETG PETG-HF	PETG Translucent	PETG PETG-CF	ABS ABS	ABS ABS-GF	ASA ASA	ASA Aero	ASA ASA-CF
Price YEN	N/A	4680¥/kg	4680¥/kg	7080¥/kg	4180¥/kg	5080¥/kg	5080¥/kg	12580¥/kg	N/A
8x refill YEN		3060¥/kg	3060¥/kg		2685¥/kg				
Density	1.25g/cm³	1.28g/cm³	1.25g/cm³	1.25g/cm³	1.05g/cm³	1.08g/cm³	1.05g/cm³	0.99g/cm³	1.02g/cm³
Heat resistance	69 °C	69 °C	74 °C	74 °C	87 °C	99 °C	100 °C	85 °C	110 °C
Saturated water	0.32%	0.40%	0.30%	0.30%	0.65%	0.53%	0.45%	0.80%	0.33%
Young's Modul XY	1.5 GPa	1.8 GPa	1.4 GPa	2.5 GPa	2.2 GPa	3.2 GPa	2.5 GPa	2.0 GPa	4.2 GPa
Young's Modul Z	1.1 GPa	1.5 GPa	1.2 GPa	1.3 GPa	2.0 GPa	2.3 GPa	2.1 GPa	1.2 GPa	2.3 GPa
Tensile Stren XY	32 MPa	34 MPa	33 MPa	35 MPa	33 MPa	36 MPa	37 MPa	32 MPa	34 MPa
Tensile Stren Z	28 MPa	23 MPa	29 MPa	29 MPa	28 MPa	29 MPa	31 MPa	21 MPa	30 MPa
Bending Modul XY	1.7 GPa	2.1 GPa	1.6 GPa	2.9 GPa	1.9 GPa	2.9 GPa	1.9 GPa	1.5 GPa	3.7 GPa
Bending Modul Z	1.3 GPa	1.8 GPa	1.5 GPa	1.6 GPa	1.6 GPa	2.0 GPa	1.7 GPa	1.2 GPa	1.4 GPa
Bending Stren XY	65 MPa	64 MPa	68 MPa	70 MPa	62 MPa	68 MPa	65 MPa	58 MPa	72 MPa
Bending Stren Z	48 MPa	48 MPa	55 MPa	48 MPa	39 MPa	46 MPa	40 MPa	24 MPa	33 MPa
Impact Strength XY	53 kJ/m²	32 kJ/m²	37 kJ/m²	41 kJ/m²	39 kJ/m²	15 kJ/m²	41 kJ/m²	32 kJ/m²	14 kJ/m²
Impact Strength Z	14 kJ/m²	11 kJ/m²	7 kJ/m²	11 kJ/m²	7 kJ/m²	5 kJ/m²	5 kJ/m²	3 kJ/m²	9 kJ/m²
UV resistance	★★★★	★★★★	★★★★	★★★★	★	★	★★★★★	★★★★★	★★★★★
Drying required		🔥	🔥	🔥 (opt)		🔥		🔥	🔥
Drying oven	65°C, 8h	65°C, 8h	65°C, 8h	65°C, 8h	80°C, 8h	80°C, 8h	80°C, 8h	80°C, 8h	80°C, 8h
Drying heatbed	80°C, 12h	80°C, 12h	80°C, 12h	80°C, 12h	95°C, 12h	95°C, 12h	95°C, 12h	95°C, 12h	95°C, 12h
AMS compatible	✓	✓	✓	✓ (🚫 lite)	✓ (🚫 lite)	✓ (🚫 lite)	✓ (🚫 lite)	✓ (🚫 lite)	✓ (🚫 lite)
Liquid Glue	✓	✓	✓	✓	✓	✓	✓	✓	✓
Abrasive				⚙️					
Warps					↓	(less)	↓	↓	(less)
Layer adhesion	14 kJ/m²	11 kJ/m²		11 kJ/m²	7 kJ/m²↓	5 kJ/m²↓	5 kJ/m²↓		9 kJ/m²↓
Nozzle / hardened	>=0.4mm	All	All	>=0.4 ⚙️	All	>=0.4mm ⚙️	=0.4 ⚙️	=0.4mm	>=0.4 ⚙️
Build plate	🔥🔥	❄️🔥🔥	❄️🔥🔥	🔥🔥	🔥🔥	🔥🔥	🔥🔥	🔥🔥	🔥🔥
Print speed	200mm/s	300mm/s	220mm/s	200mm/s	300mm/s	180mm/s	250mm/s	150mm/s	250mm/s
Max Volum flow	13mm³/s	21mm³/s	6mm³/s	12mm³/s	16mm³/s	12mm³/s	18mm³/s	12mm³/s	18mm³/s
Tips	Tips					use 0.6mm	Outdoor	Slow&Hot!	use 0.6mm
Annealing	65°C 8h	75°C 8h	65°C 8h	65°C 8h	80°C 12h	80°C 12h	80°C 12h	80°C 12h	80°C 12h

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	TPU	TPU	TPU	PC	PA	PA	PA	PPA	PET
	TPU 95A*	TPU 95A HF	68D for AMS	PC	PA6-CF	PA6-GF	PAHT-CF	PPA-CF	PET-CF
Price YEN	N/A	8480¥/kg	N/A	7280¥/kg	22080¥/kg 💰	16560¥/kg 💰	23980¥/kg 💰	33333¥/kg 💰	17280¥/kg 💰
8x refill YEN									
Density	1.20g/cm ³	1.22g/cm ³	1.26g/cm ³	1.20g/cm ³	1.09g/cm ³	1.14g/cm ³	1.06g/cm ³	1.25g/cm ³	1.29g/cm ³
Heat resistance	185 °C	183 °C	183 °C	112 °C	186 °C	182 °C	194 °C	227 °C	205 °C
Saturated water	1.16%	1.08%	1.20%	0.25%	2.35%	2.56%	0.88%	1.30%	0.37%
Young's Modul XY	🤪	🤪	1.2 GPa	2.1 GPa	4.4 GPa	2.9 GPa	3.9 GPa	11.8 GPa	4.7 GPa
Young's Modul Z			.6 GPa	1.5 GPa	2.2 GPa	2.0 GPa	2.2 GPa	4.3 GPa	2.2 GPa
Tensile Stren XY	30 MPa	27 MPa	22 MPa	55 MPa	102 MPa	75 MPa	92 MPa	168 MPa	74 MPa
Tensile Stren Z	23 MPa	22 MPa	11 MPa	34 MPa	48 MPa	27 MPa	47 MPa	57 MPa	35 MPa
Bending Modul XY	🤪	🤪	🤪	2.3 GPa	5.5 GPa	3.7 GPa	3.9 GPa	9.9 GPa	5.3 GPa
Bending Modul Z				1.6 GPa	2.2 GPa	2.3 GPa	2.2 GPa	3.2 GPa	2.2 GPa
Bending Stren XY				108 MPa	151 MPa	120 MPa	4.2 GPa	208 MPa	131 MPa
Bending Stren Z				55 MPa	80 MPa	51 MPa	1.8 GPa	63 MPa	49 MPa
Impact Strength XY	125 kj/m ²	123 kj/m ²	124 kj/m ²	35 kj/m ²	40 kj/m ²	27 kj/m ²	58 kj/m ²	42 kj/m ²	36 kj/m ²
Impact Strength Z	89 kj/m ²	86 kj/m ²	10 kj/m ²	9 kj/m ²	16 kj/m ²	4 kj/m ²	13 kj/m ²	4 kj/m ²	5 kj/m ²
UV resistance	☆☆☆	☆☆☆	☆☆☆	☆		☆	☆	☆	☆☆☆☆
Drying required	🔥	🔥	🔥	🔥	🔥	🔥	🔥	🔥	🔥
Drying oven	70°C, 8h	70°C, 8h	70°C, 8h	80°C, 8h	80°C, 12h	80°C, 12h	80°C, 12h	120°C, 12h	80°C, 12h
Drying heatbed	85°C, 12h	85°C, 12h	85°C, 12h	95°C, 12h	95°C, 12h	95°C, 12h	95°C, 12h		95°C, 12h
AMS compatible	🚫	🚫	✓	✓ (🚫 lite)	🚫	✓ (🚫 lite)	✓ (🚫 lite)	🚫	🚫
Liquid Glue	✓	✓	✓	🚫	🚫	🚫	🚫	🚫	🚫
Abrasive							⚙️	⚙️	⚙️
Warps				↓					
Layer adhesion	27 kj/m ²	86 kj/m ²	10 kj/m ²	9 kj/m ² ↓		4 kj/m ² ↓	13 kj/m ²	4 kj/m ² ↓	5 kj/m ² ↓
Nozzle / hardened	>=0.4mm	>=0.4mm	>=0.4mm	All	>=0.4 ⚙️	>=0.4 ⚙️	>=0.4 ⚙️	>=0.4 ⚙️	>=0.4 ⚙️
Build plate	❄️🔥🔥	🔥🔥	🔥🔥	🔥🔥		🔥🔥	🔥🔥	🔥🔥	❄️🔥🔥
Print speed	80mm/s 🚫	200mm/s	250mm/s	300mm/s	100mm/s 🚫	130mm/s	100mm/s 🚫	100mm/s 🚫	100mm/s 🚫
Max Volum flow	3.6mm ³ /s	12mm ³ /s	18mm ³ /s	18mm ³ /s	8mm ³ /s	10.5mm ³ /s	8mm ³ /s	6.5mm ³ /s	8mm ³ /s
Tips	Tips				use 0.6mm	use 0.6mm	use 0.6mm	use 0.6mm	use 0.6mm
Annealing	70°C 12h	🚫	70°C 12h	80°C 12h		80°C 12h	80°C 12h	130°C 12h	80°C 12h